

Notice of Allowability

Application No.

10/727,638

Examiner

Leo Boutsikaris

Applicant(s)

KIMURA, TOHRU

Art Unit

2872

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment filed on 7/13/04.
2. ☒ The allowed claim(s) is/are 37-43,45,47 and 49-51.
3. ☒ The drawings filed on 05 December 2003 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. 10/191,478.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

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DETAILED ACTION*Allowable Subject Matter*

Claims 37-43, 45, 47, 49-51 are allowed.

Claims 37-43, 45, 47, 49-51 are allowable over the prior art of record for at least the reason that, even though the prior art discloses a single lens having a diffractive structure on one surface and a concave refractive surface at the opposite surface, for compensating for aberrations, the prior art fails to teach or reasonably suggest, regarding claim 37, an aberration compensating optical element wherein $P_{\lambda 1} < P_{\lambda 0} < P_{\lambda 2}$, regarding claim 38, an aberration compensating optical element, wherein m defined by $m = \text{INT}(Y)$, $Y = \Delta \times (n-1) / (\lambda_0 \times 10^{-3})$ becomes an integer except 0 and ± 1 , regarding claims 39-40, an aberration compensating optical element wherein $0.5 \times 10^{-2} < P_D < 15.0 \times 10^{-2}$, regarding claim 41, an aberration compensating optical element wherein $P_D > 0$, $P_R < 0$, and $-0.9 < P_D/P_R < -1.1$, regarding claim 42, an aberration compensating optical element wherein a paraxial power $P_{\lambda 0}$ of the single lens is substantially zero at the wavelength λ_0 of a light flux which passes through the single lens, regarding claim 43, an aberration compensating optical element wherein when a wavelength of a light flux entering the diffractive structure is not more than 550 nm, a diffraction efficiency of the diffractive structure becomes maximal, regarding claim 45, an aberration compensating optical element wherein


$0.2 \leq |(P_{hf}/P_{hm}) - 2| \leq 6.0$, regarding claim 47, an aberration compensating optical element wherein $P_R < 0$, $0 < \Delta P_{AC}/\Delta T_{AC} < 1 \times 10^{-4}$, regarding claim 49, an aberration

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compensating optical element wherein $P_R < 0$ and a paraxial power P_{λ_0} of the single lens is substantially zero at the wavelength λ_0 of a light flux which passes through the single lens, regarding claim 50, an aberration compensating optical element, wherein $P_R < 0$ and m defined by $m = \text{INT}(Y)$, $Y = \Delta \times (n-1) / (\lambda_0 \times 10^{-3})$ becomes an integer except 0 and ± 1 , and regarding claim 51, an aberration compensating optical element wherein $P_R < 0$ and $0.2 \leq |(P_{hr}/P_{hm}) - 2| \leq 6.0$, as set forth by the claimed combination.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Leo Boutsikaris whose telephone number is 571-272-2308.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Leo Boutsikaris, Ph.D.
Patent Examiner, AU 2872
September 30, 2004


DREW A. DUNN
SUPERVISORY PATENT EXAMINER

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